

504875 - Buffering number ranges

Version	8	Type	SAP Note
Language	English	Master Language	German
Priority	Recommendations / Additional Info	Category	Performance
Release Status	Released for Customer	Released On	06.11.2006
Component	BC-SRV-NUM (Number Range Management)		

Please find the original document at <https://launchpad.support.sap.com/#/notes/504875>

Symptom

This note contains information about performance problems that occur with number ranges.

Other Terms

Performance, number range object, SNUM, SNRO, buffering, main memory

Reason and Prerequisites

The wrong buffering type is set.

Solution

Main memory buffering

You may only set the main memory buffering if no legal requirement applies to the number assignment. You can display the buffer contents of the main memory using transaction SM56.

Only use this for financial accounting documents after consulting the user department.

Advantages:

- A lock is temporarily set on the NRIV table when a new buffer is requested. (see Note 920234).
- Avoiding performance problems

Disadvantages:

- Gaps may still exist
- Gaps cannot be documented
- The numbers are not assigned chronologically.

Local buffering with Work Process ID (as of Release 4.0B)

Use only if main memory buffering is not possible.

You must manually install the 'local file + process ID' technique depending on the release and below certain Support Packages.

Advantages:

- Since numbers are assigned under a lock, the number assignment does not contain any gaps.
- Gaps can be documented using the report RSSNR0A1.

Disadvantages:

- The numbers are not assigned chronologically.
- Gaps can only occur in very rare cases (see Note 175047).
- Gaps may occur at the end of a fiscal year if not all numbers in the NRIV_LOKAL table were used.

The total number of numbers selected should not be too low. The optimal size is extremely variable and depends on the application process.

During batch parallel processing (for example, billing), the advantages of this buffering method are lost as soon as the set of numbers for a batch run has to be loaded from NRIV. Batch jobs that run parallel must wait until the first batch run has been completed before they can be loaded.

You can prevent loading during a batch run by having a very large number of buffered numbers. The disadvantage of this is that the number consumption increases greatly. A large number pool is made available to each work process, which may not be used completely.

This problem is solved by the parallel buffering (see Note 599157)

Parallel buffering

On the surface, parallel buffering behaves like the enhanced local buffering (see also Note 840901 for exceptions) and has two additional

advantages:

- There can be parallel background processing without performance problems:
- It can be implemented in all customer installations:

The local buffering using work process_id could not be implemented in all customer installations due to a restriction of the instance name. Its length could not exceed 17, but SAP allows instance names to have a length of up to 20.

Local Buffering

You should no longer use this number assignment logic because it has been replaced by local buffering with a work process ID (as of Release 4.0B).

No buffering

No buffering should only be set if required for legal reasons.

Advantages:

- The number assignment does not contain any gaps.
- The numbers are assigned chronologically.

Disadvantages:

- Performance problems may occur, since a number is assigned in each case and the table remains locked until the next COMMIT or ROLLBACK.
- You cannot request numbers in parallel.

Additional notes

179224 Document number assignment for unbuffered number ranges
599157 Number ranges: new buffering method

Software Components

Software Component	Release
SAP_BASIS	46A - 46D
SAP_BASIS	610 - 640
SAP_BASIS	700 - 701
SAP_BASIS	710 - 711
SAP_BASIS	730 - 730
SAP_BASIS	731 - 731
SAP_BASIS	740 - 740

Support Package

Software Component	Release	Support Package
SAP_BASIS	46C	SAPKB46C48
SAP_BASIS	46C	SAPKB46C49
SAP_BASIS	46C	SAPKB46C51
SAP_BASIS	620	SAPKB62053
SAP_BASIS	640	SAPKB64013
SAP_BASIS	640	SAPKB64020

This document refers to

SAP Note/KBA	Title
1524347	Buffering of billing documents - invoice creation
1524325	Poor performance due to locks on table NRIV - Buffering of billing documents
920234	Mechanism to fill the number range buffer

840901	Parallel buffering and pseudo-ascending number assignment
836889	Gaps in document number assignment
691916	Performance of GL document number assignment
678501	System standstill, locks on NRIV
599157	Number ranges: New buffering method
572905	NR: Unbuffered number ranges
551750	TIME_OUT due to block for NRIV after long select on CE4
453979	Performance CRM Billing - composite SAP note
179224	Doc.no.assignment for unbuffered number ranges
1522367	Document number gap reason and analysing method
1457522	PI documents: Number range buffering and performance
1445374	Number range buffering for earmarked funds (IRW_BELEG)
1398444	Buffering the document number assignment for RF_BELEG
1244898	NR: Reorganization of local buffers for intervals
1239139	Buffering of Number Ranges in CRM Billing
1030400	NR: Change of buffering type

This document is referenced by

SAP Note/KBA	Title
2565512	INV: Buffering the document number assignment for invoice print documents
1398444	Buffering the document number assignment for RF_BELEG
2474833	FI-CA: Enabling number of jobs in mass activities > 999
599157	Number ranges: New buffering method
678501	System standstill, locks on NRIV
1030400	NR: Change of buffering type
2042606	IP and DMP numbers not assigned continuously
1239139	Buffering of Number Ranges in CRM Billing
1679514	Material, customer, vendor numbers not assigned continuously

1445374	Number range buffering for earmarked funds (IRW_BELEG)
1522367	Document number gap reason and analysing method
1457522	PI documents: Number range buffering and performance
179224	Doc.no.assignment for unbuffered number ranges
836889	Gaps in document number assignment
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551750	TIME_OUT due to block for NRIV after long select on CE4